

CLAIMS

1. (Currently Amended) A method implemented in a mobile terminal for establishing communications with a base unit in a cordless phone system, said method comprising:
 - storing a reference geographic location associated with said base unit in said mobile terminal;
 - determining a current location of said mobile terminal;
 - computing a distance between said current location of said mobile terminal and said stored geographic location associated with said base unit;
 - conducting a search for said base unit to establish communication with said base unit;
 - and
 - controlling searching for said base unit based on said computed distance between said current location of said mobile terminal and said stored geographic location associated with said base unit by varying a search behavior of said mobile terminal dependent upon said computed distance between said current location of said mobile terminal and said stored geographic location associated with said base unit.
2. (Currently Amended) The method of claim 1 wherein varying a search behavior of said mobile terminal dependent upon said distance between said current location of said mobile terminal and said stored geographic location associated with said base unit comprises varying the frequency of said search.
3. (Currently Amended) The method of claim 1 wherein varying a search behavior of said mobile terminal dependent upon said distance between said current location of said mobile terminal and said stored geographic location associated with said base unit comprises varying the duration of said search.

4. (Currently Amended) The method of claim 1 wherein storing a reference geographic location associated with said base unit comprises:

determining the current location of said mobile terminal when communication with said

base unit is established; and

storing said current location of said mobile terminal when communication with said base

unit is established as said reference geographic location.

5. (Currently Amended) The method of claim 1 wherein storing a reference geographic location associated with said base unit comprises:

determining the current location of said mobile terminal; and

storing said current location of said mobile terminal in response to user input as said

reference geographic location.

6. (Currently Amended) The method of claim 1 wherein storing a reference geographic location associated with said base unit comprises inputting said reference geographic location by a user.

7. (Currently Amended) The method of claim 1 wherein storing a reference geographic location associated with said base unit comprises storing said reference geographic location in a removable smart card.

8. (Currently Amended) The method of claim 1 further comprising updating said reference geographic location stored in said mobile terminal following a change in said reference geographic location.

9. (Currently Amended) The method of claim 8 wherein updating said reference geographic location stored in said mobile terminal following a change in said reference geographic location comprises:

determining the current location of said mobile terminal when communication with said base unit is established;

comparing said current location of said mobile terminal to said stored reference geographic location to detect a change in said reference geographic location; and if a change in said reference geographic location is detected, storing said current location in said mobile terminal as an updated reference geographic location.

10. (Currently Amended) The method of claim 9 further comprises notifying a user when a change in said reference geographic location is detected by said mobile terminal.

11. (Currently Amended) The method of claim 10 wherein updating said reference geographic location stored in said mobile terminal following a change in said reference geographic location further comprises prompting the user to accept a change in said reference geographic location stored in said mobile terminal.

12. (Currently Amended) The method of claim 8 wherein updating said reference geographic location stored in said mobile terminal following a change in said reference geographic location comprises:

determining the current location of said mobile terminal in response to user input; and storing said current location of said mobile terminal determined in response to said user input as an updated reference geographic location.

13. (Currently Amended) The method of claim 1 wherein controlling searching for said base unit based on said distance between said current location of said mobile terminal and said stored geographic location associated with said base unit comprises determining a threshold for varying said search behavior.

14. (Currently Amended) The method of claim 13 wherein determining said threshold comprises defining a boundary of a home area containing said reference geographic location, wherein said boundary serves as said predetermined threshold.

15. (Currently Amended) The method of claim 14 wherein defining a boundary of a home area containing said reference geographic location comprises setting said boundary in response to user input.

16. (Currently Amended) The method of claim 15 wherein defining a boundary of a home area containing said reference geographic location comprises:

determining the current location of said mobile terminal at a plurality of time instants when communication with said base unit is established; and

determining said boundary of said home area based on said current location of said mobile terminal at said plurality of time instants.

17. (Currently Amended) The method of claim 1 further comprising determining a position update frequency based on said distance between said current location of said mobile terminal and said reference geographic location.

18. (Currently Amended) The method of claim 17 wherein determining said position update frequency based on said distance between said current location of said mobile terminal and said reference geographic location comprises increasing said update frequency as said distance between said current location of said mobile terminal and said reference geographic location decreases.

19. (Currently Amended) The method of claim 17 wherein determining a position update frequency based on said distance between said current location of said mobile terminal and said reference geographic location comprises decreasing said update frequency as said distance between said current location of said mobile terminal and said reference geographic location increases.

20. (Original) The method of claim 17 further comprising determining the velocity of said mobile terminal based on two or more position estimates.

21. (Currently Amended) The method of claim 20 wherein determining said position update frequency based on said distance between said current location of said mobile terminal and said reference geographic location further comprises determining said position update frequency as a function of said distance between said current location and said reference geographic location and said velocity of said mobile terminal.

22. (Currently Amended) The method of claim 21 wherein determining said position update frequency as a function of said distance between said current location of said mobile terminal and said reference geographic location and said velocity of said mobile terminal comprises increasing said position update frequency as said velocity increases and decreasing said position update frequency as said velocity decreases.

23. (Original) The method of claim 1 further comprising updating said current position of said mobile terminal when communication with said base unit is established.

24. (Original) The method of claim 23 wherein updating said current position of said mobile terminal when communication with said base unit is established comprises notifying a user if said current position cannot be determined.

25. (Currently Amended) A dual function mobile terminal compatible with a cordless phone system comprising:

a positioning receiver to compute a current location of said mobile terminal;

a short-range RF interface to communicate with a base unit in said cordless phone system when said mobile terminal is within the range of said base unit and to search for said base unit when said mobile terminal is out of range of said base unit;

a processor to compute the distance between said current location of said mobile terminal and a stored reference geographic location for said base unit and to control a search behavior of said short-range interface based on said computed distance.

26. (Original) The mobile terminal of claim 25 wherein said short-range RF interface periodically searches for said base unit with a predetermined search frequency.

27. (Currently Amended) The mobile terminal of claim 26 wherein said processor controls said search behavior of said RF interface by varying said search frequency based on said distance between said current location of said mobile terminal and said geographic location for said base unit.

28. (Currently Amended) The mobile terminal of claim 25 wherein said processor is programmed to store said current location as said reference geographic location when said RF interface has established communication with said base unit.

29. (Currently Amended) The mobile terminal of claim 25 wherein said mobile terminal further comprises a user interface and wherein said processor is programmed to store said current location as said reference geographic location in response to user input via said user interface.

30. (Currently Amended) The mobile terminal of claim 25 wherein said mobile terminal further comprises a user interface and wherein said processor is programmed to store as said reference geographic location a location input by a user via said user interface.

31. (Currently Amended) The mobile terminal of claim 25 wherein said processor is programmed to update said reference geographic location when said processor detects a change in the location of said base unit.

32. (Currently Amended) The mobile terminal of claim 31 wherein said processor detects a change in the location of said base unit by determining said current location of said mobile terminal upon mating with said base unit and comparing said current location upon mating with said base unit to a previously-stored reference geographic location for said base unit.

33. (Currently Amended) The mobile terminal of claim 32 wherein said mobile terminal further comprises a user interface and wherein processor notifies the user via said user interface when said processor detects a change in said reference geographic location.

34. (Currently Amended) The mobile terminal of claim 33 wherein said processor prompts the user via said user interface to accept a change in said reference geographic location when said processor detects a change in said reference geographic location.

35. (Currently Amended) The mobile terminal of claim 34 wherein said processor updates said current location of said mobile terminal as an updated reference geographic location in response to user input via said user interface.

36. (Currently Amended) The mobile terminal of claim 25 wherein the processor is programmed to define a boundary of a home area containing said reference geographic location, said processor using said boundary to control a search behavior of said RF interface.

37. (Original) The mobile terminal of claim 36 wherein said mobile terminal further comprises a user interface and wherein said processor is programmed to define said boundary in response to input from the user via said user interface.

38. (Currently Amended) The mobile terminal of claim 36 wherein said processor is programmed to define said boundary containing said reference geographic location by determining said current location of said mobile terminal when said RF interface establishes communication with said base unit.

39. (Currently Amended) The mobile terminal of claim 25 wherein said processor determines a position update frequency based on said distance between said current location of said mobile terminal and said reference geographic location.

40. (Currently Amended) The mobile terminal of claim 39 wherein said processor is further programmed to increase said update frequency as said distance decreases between said current location of said mobile terminal and said reference geographic location.

41. (Currently Amended) The mobile terminal of claim 39 wherein said processor is further programmed to decrease said update frequency as said distance increases between said current location of said mobile terminal and said reference geographic location.

42. (Original) The mobile terminal of claim 39 wherein said processor is programmed to determine the velocity of said mobile terminal by computing the difference in two or more of said position estimates.

43. (Currently Amended) The mobile terminal of claim 42 wherein said processor is further programmed to determine said position update frequency as a function of said distance between said current location of said mobile terminal and said reference geographic location, and as a function of said velocity of said mobile terminal.

44. (Currently Amended) The mobile terminal of claim 43 wherein said processor is programmed to determine said position update frequency as a function of said distance between said current location of said mobile terminal and said reference geographic location and as a function of said velocity of said mobile terminal; said processor is further programmed to increase said position update frequency as said velocity increases; said processor is further programmed to decrease said position update frequency as said velocity decreases.

45. (Currently Amended) A system to permit communication of a wireless mobile terminal with the public switched telephone network comprising:

a public land mobile network;

a private cordless base unit connected to the public switched telephone network in the same manner as a conventional corded telephone;

a mobile terminal comprising:

a positioning receiver to compute a current location of said mobile terminal;

a short-range RF interface to communicate with a said private cordless base unit ~~in said cordless phone system~~ when said mobile terminal is within the range of said private cordless base unit and to search for said private cordless base unit when said mobile terminal is out of range of said base unit;

a processor to compute the distance between said current location of said mobile terminal and a stored reference geographic location for said private cordless base unit and to control a search behavior of said short-range interface based on said computed distance.